

REMARKS

I. Status of Claims

Claim 1 is amended herein by deleting the words “kind of” in the phrase “same kind of monomer”. Support is provided, for example, at the paragraph bridging pages 21-22 and Example 1 of the specification.

Upon entry of the Amendment, claims 1, 2, 5 and 6 will be all of the claims pending in the application.

II. Response to Claim Rejections - 35 U.S.C. § 112

1. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. § 112, first paragraph, allegedly because the specification does not reasonably provide enablement for both PSA layers having the same composition.

As the basis for this rejection, the Examiner states that the claim language requires that each adhesive layer has a specific peeling strength, which is different from each other, and further that the adhesive strength of the adhesive layer on the touch panel side is measured to norbornene resin based film and the adhesive strength of the adhesive layer on the display device side is measured to a glass plate or a triacetal cellulose film.

The Examiner asserts that to achieve the difference in the adhesive strength as claimed, either (A) both adhesive layers have the same composition and since they are each bonded to a different substrate, the adhesive strength of each adhesive is different or (B) both the adhesive layers have different adhesive strengths because each is formed of a different composition.

The Examiner further asserts that the scope of claim 1 encompasses both (A) and (B) above, but that the specification is only enabled for (B). In this connection, the Examiner states that the specification discloses that each adhesive layers had a different composition such as shown in Example 1 wherein PSA A1 and PSA A2 are formed of a different composition employing 92 parts of butyl acrylate vs. 98 parts of butyl acrylate. Thus, the Examiner concludes that undue experimentation would be required because there is no direction or guidance or working example wherein both adhesive layers have the same composition.

Applicants respectfully traverse the rejection.

First, the Examiner improperly characterizes the claim language. The Examiner states that the present specification is not enabling for a double-sided PSA tape having the "same composition". However the present claims do not recite that both PSA adhesive layers must have the "same composition". Present claim 1 recites that each PSA layer comprises an acrylic polymer containing (meth)acrylic acid alkyl ester in which the alkyl moiety has from 1 to 18 carbon atoms selected from the monomers recited therein; the major monomer for the respective PSA layers is constituted from the same monomer; and the major monomer component constituting each PSA layer is 80% by weight or more based on the whole amount of the monomer components. Thus, while claim 1 requires that the two PSA layers are constituted from the same monomer as the major monomer component and that the amount of that major monomer component in each layer is 80% by weight or more, claim 1 does not require that the two adhesive layers must have the same composition.

As shown in Example 1 referred to by the Examiner, the two PSA layers are made of the same monomer, i.e., butyl acrylate, and the amount of that major monomer component in one layer is 92 parts by weight butyl acrylate and in the other layer is 98 parts by weight, each of which are within the scope of present claim 1 which requires that the major monomer component in each layer is 80% or more by weight. Thus, it is clear that: (1) the major monomer composition in the respective PSA layers are the same (identical); and (2) the compositions (e.g., ratio of components) of respective PSA layers are not necessarily the same.

Further, the Examiner appears to recognize that the peeling adhesive strength of the two PSA layers is different as measured based on the different substrates to which each is bonded. However, it is not clear why the Examiner does not consider the present specification to be enabling for the claimed invention wherein the PSA layers have the same kind of monomer in an amount of 80% or more by weight and have different peeling adhesive strengths to different substrates. The Examiner has not met his burden of providing a reasonable technical basis for asserting the present invention as claimed is not enabled by the specification.

The claims are clear in that the two PSA layers have the same major monomer component within a specified concentration range and that these PSA layers have different adhesive strengths to the specified different substrates. Further, the specification clearly describes how the adhesive strengths of the PSA layers of the double-sided tape are measured and the working examples provided in the specification, such as Example 1 referred to by the Examiner, are commensurate in scope with the present claims. Therefore, the specification provides sufficient guidance to those of ordinary skill in the art how to practice the entire scope of the claimed invention. Thus, the claimed invention is sufficiently enabled.

Accordingly, Applicants respectfully request withdrawal of the lack of enablement rejection under §112, 1st paragraph.

2. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. § 112, 2nd paragraph, as allegedly failing to comply with the written description requirement.

The Examiner asserts that the specification fails to provide support for the recitation of “not more than 50 μm ” with respect to the thickness of the double-sided pressure-sensitive adhesive. The Examiner does indicate however, that the specification provides support for a thickness of 10-50 or 20-50 μm as stated at page 32, lines 5-9 of the specification.

Applicants traverse the rejection.

The specification specifically provides for a thickness of not more than 50 μm as stated at page 51, lines 1-4, of the specification and the Examples in the Table referred to at this portion of the disclosure are exemplary and do not limit the broader teaching of the range of “not more than 50 μm ”. Further, those of ordinary skill in the art would readily recognize that Applicants were in possession of the claimed invention at the time the application was filed. Therefore, the claimed invention is adequately described and the written description requirement is met.

Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112, 1st paragraph, for lack of written description.

3. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. § 112, 2nd paragraph, as allegedly being indefinite. The Examiner states that the recitation “same kind of monomer” is ambiguous because it is not clear whether Applicants intend to convey that both PSA layers are formed of the identical monomer (e.g., methyl (meth)acrylate) or that both PSA layers are

formed of the same type of monomer (e.g., alkyl (meth)methacrylate). For purposes of examination, the Examiner considers that “same kind of monomer does not mean that both PSA layers are formed of identical monomers.

Applicants traverse the rejection and submit that the claim language is clear in indicating that: (1) the major monomer composition in the respective PSA layers are the same (identical); and (2) the compositions (e.g., ratio of components) of respective PSA layers are not necessarily the same. This is also supported by the specification at the paragraph bridging pages 21-22 and Example 1 of the specification. Thus, when properly read in light of the specification, one of ordinary skill in the art can readily ascertain the meaning and scope of the claim language.

Accordingly, Applicants respectfully request withdrawal of the §112, 2nd paragraph, rejection.

III. Response to Claim Rejections under 35 U.S.C. § 103

1. Claims 1, 2 and 5 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kishioka et al (US 2002/0098352 A1) in view of [Hitoshi] Takahira et al (EP 0930322A2) (hereinafter EP ‘322).

The Examiner essentially relies on the references as in previous Actions but takes a different position with respect to some of the elements of the present claims. The Examiner now asserts that based on the information given in Kishioka's disclosure with respect to the individual thickness of the PSA layer, selecting the total thickness of the PSA sheet so as to arrive at the Applicant's claimed thickness would have been obvious, motivated by the desire to provide suitable handling properties to the PSA sheet of Kishioka.

Regarding the recitation that the major monomer component of the PSA layers is constituted from the same monomer, the Examiner takes the position that "same-kind of monomer" does not necessarily mean that both PSA layers are formed of identical monomers. Thus based on the disclosure of Kishioka et al of alkyl (meth)acrylates at paragraph [0039], the Examiner concludes that it would have been obvious to form each PSA layer of Kishioka's adhesive sheet from same kind of monomers, motivated by the desire to simplify the process of forming the PSA sheet.

Regarding the amount of the major monomer component of 80% by weight or more, the Examiner relies on EP '322 as in the previous Actions and further states that the disclosure of EP '322 at paragraph [0017] is interpreted as teaching the presence of 85% to 95% by weight of (meth)acrylic acid alkyl ester monomer provides well balanced adhesive property and heat resistance. Thus, the Examiner concludes that it would have been obvious to combine the references and arrive at the recited amount of the major monomer component.

As for the peeling adhesive strength, the Examiner continues to assert that this property is necessarily present in the double-sided PSA of Kishioka et al as modified by EP '322 based on the presumption that the double-sided PSA sheets of the invention and of Kishioka et al as modified by EP '322 comprises at least two PSA layers wherein the PSA sheet has a thickness of not more than 50 μm and has the same acrylic polymer for the reasons discussed above.

Without conceding the merits of the rejection, claim 1 is amended to recite that the major monomer of the PSA layers is constituted of the "same monomer" as supported by the disclosure at the paragraph bridging pages 21-22 of the specification and Example 1.

The present invention is directed to a double-sided PSA sheet having the following features: (1) at least two PSA layers; (2) no substrate; (3) optical isotropy; (4) thickness of not more than 50 μm ; (5) PSA layer in the touch panel side having a 180°-peeling adhesive strength (to a norbornene based resin film at a peeling rate of 300 mm/min at 23°C) of 5.5 N/20 mm or more; (6) PSA layer in the display device side having a 180°-peeling adhesive strength (to a glass plate or a triacetyl cellulose film at a peeling rate of 300 mm/min at 23°C) of not more than 5.0 N/20 mm; (7) the double-sided pressure-sensitive adhesive sheet is repeatedly peelable from the display surface of the display device together with the touch panel; (8) each PSA layer comprises an acrylic polymer containing (meth)acrylic acid alkyl ester in which the alkyl moiety has from 1 to 18 carbon atoms selected from the monomers recited in claim 1; (9) the major monomer for the respective PSA layers is constituted from the same monomer; and (10) the major monomer component constituting each PSA layer is 80% by weight or more based on the whole amount of the monomer components.

As previously pointed out, at least the combination of features (5) and (6) is not taught or suggested by any of the cited references. The Examiner takes the position that these features are believed to be present in the double-sided PSA tapes of Kishioka as modified by EP '322. However neither of these references, teaches or even mentions the adhesive strength of a PSA layer in the touch panel side and the adhesive strength of a PSA layer in the display device side. Further, neither of these references teaches or suggests the relationship of the different adhesive strengths of the PSA layer on the touch panel side and the PSA layer on the display panel side, wherein the adhesive strength of the PSA layer on the touch panel side is higher than the peeling strength of the PSA layer of the display side, i.e., 5.5 N/20 mm or more vs. not more than 5.0

mm, respectively. For at least this reason, the cited references do not teach or suggest the claimed invention, whether taken alone or in combination.

The Examiner's position that these features are believed to be present in the double-sided PSA tapes of Kishioka as modified by EP '322 is based on the assertion that the PSA tapes of Kishioka as modified by EP '322 are structurally and compositionally equivalent. However, Applicants submit that the Examiner is not correct in this regard.

First, the thickness of the total double-sided PSA sheet of the claimed invention is not more than 50 μ m. Kishioka teaches the thickness of the PSA layer in the range of from 5 to 500 μ m and more preferably in the range of from about 10 to 100 μ m. Kishioka does not specifically teach the total thickness of a double-sided PSA sheet having at least two PSA layers. There are thousands of possible combinations of the thicknesses of the two PSA layers and there is no apparent reason to choose two or more PSA layers, each having a thickness within the very broad range taught by Kishioka, such that the total thickness would be within the claimed range of not more than 50 μ m.

EP '322 also teaches the thickness of the PSA layer and fails to teach or suggest the total thickness of a double-sided PSA sheet having at least two PSA layers. EP '322 teaches that the PSA layer has a thickness of from 10 to 100 μ m. There are thousands of possible combinations of the thicknesses of two PSA layers having a thickness within the range taught by EP '322 and there is no apparent reason to choose two or more PSA layers, each having a thickness within the range taught by EP '322, such that the total thickness would be within the claimed range of not more than 50 μ m.

The total thickness of not more than 50 μm leads to excellent optical characteristics as can be seen from Examples 1 and 2 in Table 1 of the specification. Thus, even if Kishioka and EP '322 were combined, one of ordinary skill in the art would not necessarily arrive at the claimed total thickness range and therefore, for at least this reason, it cannot be said that the PSA tape of Kishioka modified by EP '322 would be structurally equivalent to the present invention.

Further, even if Kishioka and EP '322 were combined, the PSA tape of Kishioka modified by EP '322 would not be compositionally equivalent to the claimed invention. Present claim 1 requires that the major monomer in the PSA layers is the same monomer. There is no disclosure in Kishioka indicating that the PSA layers are formed of the same monomer.

EP '322 also fails to teach or suggest that the major monomer in the PSA layers is the same monomer. Also, the disclosure of EP '322 at paragraph [0036] cannot be fairly interpreted as reading on a double-sided adhesive sheet having at least two PSA layers and no substrate, since this portion of EP '322, specifically teaches "the layer of the pressure-sensitive adhesive is stuck to one surface or both surfaces of the base material and . . . can be used as a pressure sensitive adhesive sheet having the base material."

Thus, it cannot be said that the PSA tape of Kishioka modified by EP '322 would be compositionally equivalent to the claimed invention.

Since the PSA tape of Kishioka modified by EP '322 would not be structurally and compositionally equivalent to the claimed invention for the reasons set forth above, the properties recited in the claims are not necessarily present as it has been established that inherency cannot be based on probabilities or possibilities. Consequently, the combination of

Kishioka et al and EP '322 would not necessarily result in a double-sided PSA tape having the claimed peeling adhesive strengths. For at least this reason the present invention is not rendered obvious by the cited references, whether taken alone or in combination.

Additionally, Applicants submit that the Examiner is not properly considering the claimed invention as a whole, but is instead improperly considering obviousness of individual elements of the claims. The claimed invention as a whole is not taught or suggested by the cited references.

2. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kishioka et al in view of EP '322, as applied to claims 1, 2, and 5 above, and further in view of Okabe et al (JP 07-105781) (hereinafter '781) essentially for the reasons of record.

Applicants respectfully traverse the rejection and submit that Okabe et al does not remedy the deficiencies of Kishioka et al and EP '322 for the reasons of record and therefore, even if combined with Kishioka and EP '322, the present invention would not have been achieved.

Accordingly, Applicants respectfully request withdrawal of the obviousness rejections under 35 U.S.C. § 103.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

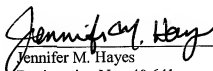
SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON DC SUGHRUE/265550

65565

CUSTOMER NUMBER

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Jennifer M. Hayes
Registration No. 40,641